

# QUARTERLY SUMMARY

OF THE

## IMPROVEMENTS AND DISCOVERIES

IN THE

### MEDICAL SCIENCES.

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#### ANATOMY AND PHYSIOLOGY.

1. *On the Spleen.* By Drs. VERGA and TIGRI.—DR. VERGA detailed to the *Scienziati* at Venice the results of his multiplied experiments upon the removal of the spleen of cats, dogs, &c. He arrived at the following conclusions:—1. Nature does not constantly provide animals who have been deprived of their spleens with a new one, nor with a greater development of the liver, the thyroid body, the omentum, or the mesenteric glands. 2. Obesity, salacity, or sterility, are not constant or frequent effects of its removal. 3. Among the least unfrequent phenomena is to be noted during life, a greater vivacity, conjoined with a tendency to tabes, notwithstanding a keen appetite; and after death various alterations in the liver.

Dr. Verga was opposed to considering the spleen as performing a mere mechanical office, as a diverticulum of the blood in the case of impeded circulation; but still he was desirous of giving some account to the congress of Dr. Tigri's researches, who had discovered in a special condition of the vessels of the human spleen—a mechanism which he termed a "compensator for the circulation." He found, as far as the eye and the scalpel could pursue them, that the splenic arteries and veins always ran within a common, inextensible cellular sheath, the veins being four or five times larger than the arteries, and in good part surrounding the calibre of these; the parietes of both vessels being so thin as to allow of the action of the fluid they contain being reciprocally felt. When a too large influx of blood upon the spleen takes place, therefore, the veins compress the arteries and impede a farther flow. Dr. Tigri was surprised to find that in the *horse* the veins and arteries ran at some distance from each other; but this fact, which seemed at first to oppose his theory, was found to support it, when he discovered that nature, besides having given the *vena portæ* in this animal a valve, as first shown by Ernest Weber, has likewise furnished the veins leaving the spleen with valves, so that a regurgitation of blood into the viscus is prevented.

Dr. Verga mentioned, that in removing the spleen in cats and dogs, we may divide the duplicature of the peritoneum, connecting it to the stomach, without tying any of the small vessels into which the arteries and veins are there subdivided, these not giving rise to any important hemorrhage.—*Brit. & For. Med. Chirurg. Rev.*, October 1848, from *Gaz. Med. di Milano*, 1847, No. 47.

2. *On the Capillary Circulation.* By M. BOURGERY.—In addition to the capillary or intermediary system of vessels at present admitted by anatomists, and which M. Bourgery considers as constituting a mere anastomosis between the arterial and venous radicles, unconnected with the vital changes going on in the tissues, the author describes a circulation of *capilliculi*, forming a diverticulum of the general circulation, and pervading more minutely than the capillaries, the ultimate elements of every organ. These he looks upon as the proper and *special organic*

circulation, by which, in different organs, the functional changes of secretion, nutrition, &c., are carried on. The *general* circulation in itself, does not produce any functional changes, but merely preserves unbroken, and independent of the activity of the special circulation, the progressive movement of the blood, which at all times passes over in part from the arterial to the venous system, through the capillaries; while the *capillculi* receive a part of it for elaboration in the special tissues to which they are destined. These capillculi (the size is not stated) are impervious to all particles which are not in solution; the blood-corpuscles do not pass through them; nevertheless they may always be traced, varying in disposition according to the organ or tissue in which they are situated. For the most part they are tolerably uniform in size; but they may be observed, on the one hand, to pass into vessels still more minute (not equal to the half, third, or fourth part of the diameter of a blood-corpuscle); and, on the other, into the ultimate lymphatic vessels, which again communicate, by innumerable minute passages, with the venous system.

M. Bourguery conceives that this scheme of the circulation completes, without abrogating, that of Harvey and the majority of physiologists. On the one hand, it admits a general circulation of the kind described by Harvey, which is permanent and complete in the circle which it describes; in the other, it asserts an extension of this by an infinite number of partial or functional circulations, isolated from each other, but connected by means of the general circulation, and in their united capacity very much exceeding the latter. These partial circulations are special and heterogeneous in their function and distribution, and are only periodically active; the only exception to this being in the lung, where the special may be considered as subserving a mechanico-chemical function; and being properly a function or complement of the general circulation, is, like it, permanent and complete.—*Comptes Rendus*, Sept. 4, 1848.

[We have endeavoured to express what appears to be the author's meaning, although the involved and inexact style in which the conclusions are given, renders it, in some instances, not a little difficult to be assured of having done so correctly. MM. Magendie, Flourens, Serres, and Milne-Edwards, have been appointed to examine into the author's facts. Should they find any reason to suppose these correct, we would suggest the question, how the change in the *colouring matter* of the blood, which apparently does not pass through this new system of vessels, is effected; and also, what are the forces which determine the passage of the fluids through these vessels; as it can scarcely be supposed that the force of the heart, which is constantly exerted to maintain the general circulation through the very free *anastomosis* of the capillaries, should be the active agent of propulsion through this partial and occasionally active system of vessels.]—*Monthly Retrospect*, Dec., 1848.

3. *On the Action of the Pancreatic Fluid.* By M. CH. BERNARD.—The author of this paper concludes from his experiments that the pancreatic secretion is essential to the reception of fatty matters into the system. He found that it immediately produces an emulsion, when mixed with oily substances; a property which is not possessed by any other animal fluid. The first action seems purely mechanical; but after a time a further change takes place, the fats being decomposed into their fatty acids and glycerine. In this state the bile, which does not act on the neutral fats, will readily take them up; and thus a mixture of bile and pancreatic juice, such as is found in the duodenum, has the double power of dissolving the neutral fats and the fatty acids. The author has found that if the pancreatic ducts be tied, no fatty matters find their way into the chyle.—*Brit. & For. Med.-Chirurg. Rev.*, October 1848, from *L'Institut*, Mai 3, 1848.

4. *Note on one of the Anomalies of the Right Subclavian Artery, with Absence of the Recurrent Nerve of the Right Side.* By M. DEMARQUAY.—Anatomists and surgeons have remarked with great care, all the anomalies of origin and of distribution which the right subclavian artery can present. It is not my object here to record them. I desire only to draw attention to a curious fact which accompanies one of these anomalies; and to speak of the absence of the right recurrent nerve, when the subclavian artery of the same side arises from the left